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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,027	08/07/2001	Mitchell M. Jackson	3091R	3043

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THE LUBRIZOL CORPORATION
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Wickliffe, OH 44092-2298

EXAMINER

TOOMER, CEPHIA D

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/924,027	JACKSON ET AL.	
	Examiner	Art Unit	
	Cephia D. Toomer	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,6,8 and 12-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,6,8 and 12-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 15, 2004 has been entered.
2. This Office action is in response to the amendment filed November 15, 2004 in which claims 1, 6, 12 and 13 were amended and claims 16-17 were added.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 6, 8 and 12-17 rejected under 35 U.S.C. 103(a) as being unpatentable over Malfer (US 5,725,612) in view of Aiello (US 5,006,130).

Malfer teaches a fuel composition, preferably gasoline, comprising a Mannich reaction product and a polyoxyalkylene carrier (see abstract). The Mannich reaction product is prepared by reacting a hydrocarbyl substituted hydroxyaromatic compound having a polyolefin and a C₁-C₄ alkyl substituent, an aldehyde (formaldehyde) and a

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polyamine, such as N,N-dimethylpropylenediamine (see col. 2, lines 30-57). The hydrocarbyl group of the hydroxy aromatic compound is a polyisobutylene (MW 500-3000) that has at least 70% vinylidene double bonds (see col. 3, lines 1-25, 48-56). The weight ratio of carrier to Mannich reaction is about 0.3:1 (see col. 8, lines 14-27). The Mannich reaction product is present in the composition in an amount from about 5 to about 150 ptb (2-60 ppm) (see col. 8, lines 57-63). The composition may also contain oxygenates, such as MTBE (see col. 9, lines 20-39).

Malfer teaches the limitations of the claims other than that the composition contains a hydrocarbyl polyamine detergent. However, Aiello teaches this difference.

Aiello teaches a fuel composition for reducing engine deposits comprising at least 2.5ppmw of an oil-soluble aliphatic alkylene polyamine and a polyoxy ether carrier wherein the ratio of basic nitrogen to carrier is about 0.02 or higher (see abstract; col. 2, lines 48-51). The aliphatic substituent has a molecular weight of from 500-9900 and may be a polyisobutylene group. The polyamine portion of the compound may be ethylene diamine, diethylene triamine, etc (see col. 3, lines 3-58). The composition may also contain an oxygenated blending agent (see col. 7, lines 5-15).

It would have been obvious to one of ordinary skill in the art to have combined the Mannich reaction product detergent/dispersant of Malfer with the polyamine detergent of Aiello because it is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose. *In re Kerkhoven*, 205 USPQ 1069. With respect to the ratio of polyamine to Mannich product, it would be

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reasonable to combine these components at least in a proportion of about 0.75:1 to 1:0.75 or 1:1 given that each component is used for the same purpose. The skilled artisan would reasonable expect that about equal portions of the components would be used in the composition.

5. Claims 1, 3, 6, 8, and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harle (US 4,166,726) in view of Moreton (US 5,876,468).

Harle teaches a diesel fuel composition for reducing deposits. The composition comprises a mixture of a polyalkylene amine and a Mannich base reaction product (see abstract; col.. 1, lines 5-37; examples).

The Mannich base is prepared by reacting an alkylated phenol wherein the alkyl groups have from 1-100 carbon atoms (preferably polybutylene), formaldehyde, and amines (N,N-dimethylamino-propyleneamine)(see col. 2, lines 1-64).

The polyalkylene amine may be polyisobutylene ethylenediamine, diethylenetriamine, etc. (see col 3, lines 25-38; col. 4, lines 4-23 and claim 14). The polyalkylene amine has a molecular weight in the range of 220-2700 (see col. 4, lines 24-29).

The additives are each present in the fuel composition in an amount from 25 to 100 ppm (see col. 4, lines 42-49). The ratio of the polyalkylene amine to the Mannich base is from 1:19 to 19:1 (see col. 4, lines 59-62). This ratio encompasses that of the present invention.

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Harle teaches the limitations of the claims other than that the alkyl substituent is derived from a polyisobutylene having at least 70% of the olefinic double bonds as vinylidene double bonds. However, Moreton teaches this difference.

Moreton teaches a fuel composition comprising a Mannich reaction product of a phenol, an aldehyde and ethylene diamine, wherein the phenol is PIB substituted phenol wherein at least 70% of the terminal olefinic double bonds in the PIB are of the vinylidene type (see abstract).

It would have been obvious to one of ordinary skill in the art to have replaced the phenol reactant of Harle with that of Moreton because Moreton teaches that Mannich reaction products made with these reactants produce better fuel detergents than those described in the prior art (see page 2, lines 23-26).

6. Applicant's arguments filed November 15, 2004 have been fully considered but they are not persuasive.

Applicant argues that Malfer and Aiello in combination do not disclose or suggest the unexpected effectiveness and efficiency of the fuel composition of the claims in controlling intake valve deposits that is demonstrated by the Examples in Tables 1 and 2.

The examiner respectfully disagrees. The showings are not commensurate in scope with the claims. The Examples use a ratio of polyamine detergent to Mannich detergent of 0.97:1. Applicant is not claiming this ratio. The data contain no examples wherein the comparative examples do not contain a huge amount of polyether, as

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compared to the examples of the invention. The examiner cannot ascertain from this data if unexpected results are obtained.

Applicant argues that the combination of references do not suggest the claimed ratio of about 1:1. Applicant argues that the combination suggests a polyamine detergent to Mannich detergent of 0.14-0.83:1 or 0.1-0.23:1.

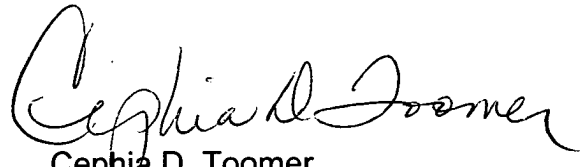
Since Applicant's calculations show that the ratio of polyamine detergent to Mannich detergent may be 0.83:1, it is the examiner's position that a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skill in the art would have expected them to have the same properties. *Titanium Metals v. Banner*, 227 USPQ 773 (Fed. Cir. 1985).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cephia D. Toomer whose telephone number is 571-272-1126. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Cephia D. Toomer
Primary Examiner
Art Unit 1714

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